C H A P T E R 19

Configuring EVC-Lite

This document describes how to configure EVC-Lite, which is a lite version of the Ethernet Virtual Connections (EVC) feature on Supervisor Engine 7L-E. The associated command pages are also provided.

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About EVC-Lite

Ethernet virtual circuits (EVCs) define a Layer 2 bridging architecture that supports Ethernet services. An EVC is defined by the Metro-Ethernet Forum (MEF) as an association between two or more user network interfaces that identifies a point-to-point or multipoint-to-multipoint path within the service provider network. An EVC is a conceptual service pipe within the service provider network. A bridge domain is a local broadcast domain that exists separately from VLANs.

A Catalyst 4500 series switch comprises of two bridge domains (BDs), BD 0 and BD 1. By default, all ports belong to BD 0 and you can move them to BD 1 manually.

EVC-Lite supports 8K VLANs using the existing support of 8K Internal VLANs, segregated under the two BDs, where each BD has its own representation of 4K VLANs.

A system can have two types of VLAN's: EVC-Lite and non EVC-Lite (the default). Ordinary VLANs are VLANs without awareness of any BDs (the situation that exists when the feature is not enabled). EVC-Lite VLANs are treated differently in different bridge domains (e.g the same VLAN 2 is treated differently in BD 0 and BD 1).

A port can support both EVC-Lite and non EVC-Lite VLANs. EVC-Lite VLANs that are part of BD 1 are mapped to an internal VLAN ID as VLAN ID + 4096. Remaining VLANs are not mapped internally.

How to Configure EVC-Lite

Step 1 Create a VLAN:

```
Switch# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)# vlan vlan-ID
Switch(config-vlan)# exit
```

Step 2   Configure the VLAN as an EVC-Lite VLAN:

```
Switch(config)# vlan configuration vlan_ID
Switch(config-vlan-config)# evc-lite
Switch(config-vlan-config)# exit
```

Step 3   Associate the EVC-Lite VLAN to an interface:

```
Switch(config)# interface gigabitethernet slot/port
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport trunk allowed vlan vlan_ID
```

Step 4   Enable the interface with bridge-domain {0|1}:

```
Switch(config-if)#?
Interface configuration commands:
  -----
  -----
  evc-lite             set the interface in evc-lite mode
--More--
Switch(config-if)# evc-lite bridge-domain bridge-domain
Switch(config-if)# exit
```

This sequence creates an EVC-Lite VLAN and associates it to an interface. The same VLAN can be associated with multiple interfaces, although each interface can have only one bridge-domain. On a Catalyst 4500 series switch, we can have two BDs (0 and 1). Because each BD supports 4K VLAN's, we can support 8K VLANs. An EVC-Lite VLAN can be associated with the BD 0 and 1 interfaces. However, traffic flowing on this VLAN under BD 1 will never flow under BD 0 and vice-versa.

This example shows how to configure VLAN 10 as EVC-Lite, enable interface GigabitEthernet 7/1 in BD 1, and display configured EVC-Lite VLANs and ports in BD 1:

```
Switch(config)# vlan configuration 10
Switch(config-vlan-config)# evc-lite
Switch(config-vlan-config)# exit
Switch# show running-config | begin vlan configuration
vlan configuration 10
      evc-lite

Switch(config)# interface gigabitEthernet 7/1
Switch(config-if)# switchport mode trunk
Switch(config-if)# evc-lite bridge-domain 1
Switch(config-if)# exit
Switch# show run interface gigabitEthernet 7/1
Building configuration...

Current configuration : 119 bytes
!
interface GigabitEthernet7/1
 switchport mode trunk
 evc-lite bridge-domain 1
end

Switch# show evc-lite
 evc-lite vlans: 10
 Ports in bridge-domain 1: Gi7/1
```

Note   Because a port channel can only accommodate member links belonging to the BD of the port-channel, the **show evc-lite** command displays only the port-channel instead of all the member links.